



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/978,326	10/16/2001	James J. Xu	19763/82069	4458

7590 01/07/2004
Barnes & Thornburg
600 One Summit Square
Fort Wayne, IN 46802

EXAMINER

BISSETT, MELANIE D

ART UNIT	PAPER NUMBER
----------	--------------

1711

DATE MAILED: 01/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/978,326

Applicant(s)

XU, JAMES J.

Examiner

Melanie D. Bissett

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34 and 35 is/are allowed.
- 6) ☒ Claim(s) 21-33 and 36-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other:

1. The rejections of the prior Office action have been withdrawn based on the applicant's amendments. However, new rejections have been made, as necessitated by amendment.

Election/Restrictions

2. Applicant's election with traverse of the acid species in the paper filed 9/5/03 is acknowledged. The traversal is on the ground(s) that the claims also encompass mixtures of the species. This is not found persuasive because the claims also encompass distinct polymeric materials made from the individual species. The possibility of the addition of other monomers does not render the materials less distinct from one another.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 21-33, 36, and 38-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 21 recites a Markush group of "one or more acid, anhydride, or hydroxy functional reactants" and proceeds to list, in another Markush group, a number of specific reactants. However, another limitation "or a vinyl terminated silicone oil..." is

also present. It is unclear whether the additional limitation is intended to be part of the Markush group or not. Also, it is unclear if this vinyl terminated silicone oil is intended to replace the "one or more acid, anhydride, or hydroxy functional reactants" or whether this component is an additional component. Because the language is unclear, the limitation renders the claim indefinite.

6. Also, claim 21 recites "75 mole percent to 100 mole percent", where the mole percentage is not properly defined. It is unclear whether this percentage is based on the amount of the diisocyanate or the amount of the isocyanate-reactive components.

7. Likewise, claim 29 also recites "75 mole percent to 100 mole percent", where the mole percentage is not properly defined. It is unclear whether this percentage is based on the amount of the diisocyanate or the amount of the isocyanate-reactive components.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 21, 24-25, 29, 31, 36, and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koerner et al. in view of Fujikura LTD. Fujikura LTD (JP 05-320340) can be found on the applicant's Form PTO-1449.

10. Koerner discloses an aromatic polyamideimide resin comprising the reaction product of an aromatic diisocyanate with a tricarboxylic acid anhydride and an aliphatic dicarboxylic acid (abstract). The material is useful as a coating for magnetic wire (col. 2

lines 50-53). The reaction mixture comprises 10-50 mole percent of an aliphatic dicarboxylic acid, also comprising 50-90 mole percent of the tricarboxylic acid anhydride (col. 3 lines 16-24). Preferred examples include the mixture of trimellitic anhydride, adipic acid, and methylene diisocyanate (col. 6 lines 2-20). Example VI specifically shows MDI mixed with trimellitic anhydride and adipic acid, where the trimellitic anhydride comprises ~82 mole percent based on the moles of diisocyanate.

11. However, the reference does not teach the addition of a fluoropolymer or mineral filler. Fujikura LTD teaches a polyamideimide composition comprising finely powdered PTFE, where the additive contributes to the lubricative properties of the coating (abstract). Thus, it is the examiner's position that it would have been prima facie obvious to use PTFE particles in the coating of Koerner's invention to provide a lubricative property to the material.

12. Claims 21-31 and 36-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waki in view of Fujikura LTD.

13. Waki discloses a polyamideimide resin comprising the reaction product of a tricarboxylic acid or anhydride with a citric acid and diisocyanate (abstract). The material is useful for coating wires (col. 1 lines 9-14). As the tricarboxylic acid or anhydride, trimellitic anhydride is most suitable (col. 2 lines 54-56), and aromatic diisocyanates are also most suitable (col. 3 lines 58-64). Citric acid is used in amounts of above 5 mole percent (col. 3 lines 1-8), leaving a balance of 95 mole percent of the trimellitic anhydride at the minimum citric acid content. As the amount of trimellitic

anhydride is increased, the thermal resistance increases (col. 3 lines 15-21). The reference also specifies that a small portion of the trimellitic anhydride may be replaced with benzophenone tetracarboxylic anhydride (col. 2 lines 57-62) for purposes of increasing the imide bond ratio and enhancing heat resistance; or replacing with terephthalic acid, isophthalic acid, or adipic acid for increasing the amide bond ratio (col. 2 lines 63-68). However, the reference does not specifically disclose the applicant's claimed combination of materials having the claimed molar ratio. Since the individual components have been suggested with motivation for altering the molar amounts, it is the examiner's position that it would have been prima facie obvious to arrive at the applicant's claimed coating mixture. The motivation for adding small amounts of acid components would have been to increase the amide bond ratio while keeping a large amount of trimellitic anhydride to optimize thermal resistance properties. Waki also teaches that polyhydric alcohols, including tris(2-hydroxyethyl)isocyanurate may be included to enhance adhesion and flexibility of the resulting coating (col. 5 lines 1-20).

14. However, the reference does not teach the addition of a fluoropolymer or mineral filler. Fujikura LTD teaches a polyamideimide composition comprising finely powdered PTFE, where the additive contributes to the lubricative properties of the coating (abstract). Thus, it is the examiner's position that it would have been prima facie obvious to use PTFE particles in the coating of Waki's invention to provide a lubricative property to the material.

15. Regarding the applicant's claims 37-38 and 41 requiring a base layer, it is the examiner's position that it would have been prima facie obvious to include two of the

same polyamideimide layers on the wire of Waki's invention to amplify the benefits of the single layer. In this case, the coatings have improved solubility and heat resistance while providing insulation to a wire (col. 1 lines 59-68). Thus, the addition of a base polyamideimide layer would have served to further improve insulation while optimizing the solubility and heat resistance of the coating.

16. Claims 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koerner et al. in view of Yin et al.

17. Koerner applies as above, failing to mention the use of mineral fillers in the coatings. Yin teaches a pulsed voltage surge resistant magnet wire comprising a conductor and an insulative coating, where the coating comprises a shielding particulate filler (abstract). The binder materials for the coating include polyamideimide materials [0018], and the mineral materials include titanium oxide, alumina, silica, and clays [0020]. The mineral materials aid in shielding the wire from pulsed voltage surges [0019]. Thus, it is the examiner's position that it would have been prima facie obvious to include mineral fillers in Koerner's invention to shield the wires from such surges.

18. Claims 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Waki in view of Yin et al.

19. Waki applies as above, failing to mention the use of mineral fillers in the coatings. Yin teaches a pulsed voltage surge resistant magnet wire comprising a conductor and an insulative coating, where the coating comprises a shielding particulate filler

(abstract). The binder materials for the coating include polyamideimide materials [0018], and the mineral materials include titanium oxide, alumina, silica, and clays [0020]. The mineral materials aid in shielding the wire from pulsed voltage surges [0019]. Thus, it is the examiner's position that it would have been prima facie obvious to include mineral fillers in Waki's invention to shield the wires from such surges.

20. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koerner et al. in view of Fujikura LTD as applied to claims 21, 24-25, 29, 31, 36, and 39-40 above, and further in view of Yin et al.

21. Koerner and Fujikura LTD apply as above, failing to mention the additional use of mineral fillers. Yin teaches a pulsed voltage surge resistant magnet wire comprising a conductor and an insulative coating, where the coating comprises a shielding particulate filler (abstract). The binder materials for the coating include polyamideimide materials [0018], and the mineral materials include titanium oxide, alumina, silica, and clays [0020]. The mineral materials aid in shielding the wire from pulsed voltage surges [0019]. Thus, it is the examiner's position that it would have been prima facie obvious to include mineral fillers in the invention of Koerner and Fujikura LTD to shield the wires from such surges.

22. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Waki in view of Fujikura LTD as applied to claims 21-31 and 36-41 above, and further in view of Yin et al.

23. Waki and Fujikura LTD apply as above, failing to mention the additional use of mineral fillers. Yin teaches a pulsed voltage surge resistant magnet wire comprising a conductor and an insulative coating, where the coating comprises a shielding particulate filler (abstract). The binder materials for the coating include polyamideimide materials [0018], and the mineral materials include titanium oxide, alumina, silica, and clays [0020]. The mineral materials aid in shielding the wire from pulsed voltage surges [0019]. Thus, it is the examiner's position that it would have been prima facie obvious to include mineral fillers in the invention of Waki and Fujikura LTD to shield the wires from such surges.

Allowable Subject Matter

24. Claims 34-35 are allowed.

25. The closest prior art, Waki et al., discloses a polyamideimide resin comprising the reaction product of a tricarboxylic acid or anhydride with a citric acid and diisocyanate. Polyol materials may also be included. However, the reference does not teach the use of diphenylsilanediol. It is the examiner's position that the combination of the claimed wire coating composition provides a novel and unobvious step over the prior art.

Response to Arguments

26. Applicant's arguments with respect to claims 21-41 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (571) 272-1068. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 1711

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

mdb


RABON SERGENT
PRIMARY EXAMINER